HEALTH

EDITED BY

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Notes By the Way

"Health is the foundation of all our physical happiness."—*Herder.*

THE Sixth Annual Congress of the Sanitary Institute of Great Britain, held at Glasgow last week, passed off most successfully. We do not remember to have seen a Congress at which a larger selection of varied, interesting, and practical papers was presented. From the President's address downwards, the communications were thoroughly enjoyable, and the Congress of this year, in respect of the fulness of its details, will certainly redeem the Sanitary Institute from any suspicion of the *dilettantism* which too often creeps over the spirit of such gatherings. That the people cannot hear too much about health and physical well-being is a sound maxim. Despite educational advance, a knowledge of even the simplest laws of health lingers long. Educated persons are daily found breaking or neglecting these vital laws, and misery, pain, and expense are continually appearing before us as the results of the contravention of health conditions seen in all classes and ranks of society. It is clear that, the wider the scope which sanitary institutes and associations give themselves, the greater will be the amount of benefit which will accrue from their labours. Every man, woman, and child who is made to think even a single thought about health and its problems, represents a recruit to the great army of reformers. All health improvement means and includes individual effort, and flourishes only upon the intelligent culture of health-science in the family and home.

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PROFESSOR HUMPHRY'S Presidential address at Glasgow was eminently enjoyable. Perhaps the speaker was at his best when he dealt with educational questions in relation to health. His tilt against the cram system was effective, and his prescription of the gymnasium and lawn-tennis court, as antidotes to and preventives of over-study in both sexes, should be laid to heart by all who have to do with the health of students.

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THE remarks of Dr. Humphry on "Ventilation" dealt with an old and venerable health-topic. He showed what people, as a rule, do not yet recognise—namely, that a room, as ordinarily built, is a closed box, but for the chimney and the accidental misfitting of doors and window-sashes, which serve as entrances for the air. Again, the ventilation of bedrooms is notoriously neglected; and, when it is considered that in the long hours of sleep we are at the mercy of the atmosphere which pervades the apartment, the necessity for repose amidst pure air is readily enough justified. If Dr. Hinckes Bird's plan were better known, much of the weariness and many of the headaches produced by the non-ventilation of our bedrooms would be avoided. The plan in question is simplicity itself. Raise the lower sash of the window about three or four inches; fill up the open space by a block of wood, so that the lower sash will rest thereon. This being done, it follows that the top of the lower sash rises above the bottom of the upper sash, and a current of air thus flows in between the two sashes without draught or annoyance.

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THE addresses of Professor Gairdner and Dr. Richardson dealt with topics of high sanitary import. The title of Dr. Richardson's discourse, "Felicity as a Sanitary Research," was, in itself, "a happy thought." The happiness which health purchases for us is, in reality, the root of all other modes and forms of felicity. No one can look any question fairly and well in the face who is not a healthy being. Contrariwise, even moderate ill-health is often sufficient to distort our views of life, and to render us unfitted for the free and perfect discharge of all our duties. In man's bargaining for happiness with the powers that be, health must count, in the opinion of all who face the question fairly, as the primary condition for felicity.

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IN addition to the list of contributors to the new volume of HEALTH, whereof the present number is the first, we have to add the names of Dr. Drinkwater, F.C.S., Lecturer on Chemistry in the Edinburgh Medical School, who will contribute a series of papers on that all-important topic, "Food Adulteration." Dr. Riches will also contribute papers on "Hygiene in Relation to Education and Youth."

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THE question of the similarity between the diseases of lower animals and those of men has often been raised. Here is an item which would seem to tell in favour of the identity of an affection in the human subject and in an animal tolerably far removed from man in structure. We know that monkeys suffer from and die of the same diseases which affect humanity, but it might be supposed by many that there was a great gulf betwixt the maladies of man and the equine race. This is not the case. Many diseases of lower life (*e.g.*, farcy and glanders in the horse) are transmissible to man; and the latest piece of information proves the likeness between human and equine troubles to be very close. A horse was affected with severe rheumatism, and in the treatment of this disorder a drug which proves highly beneficial to man—namely, salicylate of soda—was administered in drachm doses every two hours. The result was highly satisfactory. After twenty-four hours of this treatment the horse was much relieved, and in ten days had completely recovered.

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A LITTLE practice is proverbially worth any amount of bare precept; and the vegetarians appear to illustrate the foregoing axiom. The question of the science of diet was recently raised, and Mr. Doremus, an ardent "food-

reformer," offers himself as a subject for experimentation on the side of the vegetarians. In his letter to the *Lancet*, Mr. Doremus offers himself "as a person the medical profession may perform experiments upon for any space of time, from one week upwards." He offers to live, as he has often lived, absolutely without animal food, his confidence being unbounded in the superiority of vegetable over the common dietary. We do not think that, after all, the experiment would be in any way a decisive one. Mr. Doremus is an individual, not a crowd, and of all things it is most dangerous to argue from particulars to universals in the matter of foods. Because A does well on a vegetable dietary is no reason for the assumption that B and C will flourish thereon. The whole matter is one of individual experience, and we cordially commend Dr. Swanwick's remarks in our present number to all interested in the question of foods.

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We learn that the Bavarian Minister of Education has prohibited in the schools under his charge the use of small squares, which are ruled over writing-paper for the purpose of guiding children in the formation of regular characters. The medical authorities who have been consulted by the Bavarian Government in this matter have condemned these rulings; and it might be well for our home authorities—parents and guardians—to see that such devices, if used at all, are abolished in our own educational systems.

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An interesting case in connection with the subject of hydrophobia has recently been reported. A domestic servant, aged 43, whilst visiting at a friend's house, and against the wish of her friend, attempted to soothe a cat which was described as being "mad." The animal bit her on the right wrist, but the occurrence created no alarm at the time, and the patient continued her daily duties until the 22nd ult., when, becoming ill, she was sent under medical advice to hospital. After a short illness she died, according to the medical evidence, of hydrophobia from the cat's bite; and the jury officiating at the inquest gave a verdict accordingly. The newspaper from which the above account is taken contains the report of the death, at Manchester, of a boy six years of age, from the same disease. In the latter case death supervened from the bite of a retriever dog, the injury having been inflicted in August last. It is interesting to note that in the case of the boy some men are reported as having sucked the wound, which was also cauterised by a chemist. In a month's time, however, fatal symptoms appeared, and the boy died from the dreaded disease in great agony. The lesson that excision or cutting out of the wounded part is the only safe treatment seems to be taught by the latter case.

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The Parisians are being duly warned against the injurious effects of the lead contained in the oilcloths used for covering tables, for lining children's carriages, and like purposes. It is said that injury arises from contact of the lead with the skin, and that vinegar allowed to come in contact with the oilcloth would form "sugars" or "acetates" of lead, which are soluble. When we learn that such cloths can be manufactured without the employment of lead, health-laws should be equal to compelling the makers to eliminate lead-preparations from their stock of materials.

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

Original Essays

"Life is not to live, but to be well."—*Martial.*

MEDICO-ELECTRICAL APPLIANCES AND THEIR EMPLOYMENT AS AIDS TO HEALTH.

By Wm. Lant Carpenter, B.A., B.Sc.

SEVENTH PAPER.

In the last article we explained at some length the meaning of that very important law by which the strength of electric currents is determined, known as Ohm's law, and we pointed out that practical consequences of the highest moment might be deduced from it, in regard to the proper arrangement of batteries according to the work which they were required to do. It was shown that the question was mainly one of resistance in the circuit, but that this resistance ought to be considered in two separate parts, the resistance external to the battery and the internal resistance of the battery itself. Where the external resistance is high, as is almost invariably the case in any of the medical applications of electricity, the strength of the current passing is affected in only a very small degree, even by a high internal resistance in the battery; but where the external resistance is low, this latter becomes a very important factor in calculating the strength of the current passing through the circuit. If this current be denoted by C, the external resistance by R, the internal by r, and the electro-motive force (see previous article) by E—then, according to Ohm's law, $C = \frac{E}{R+r}$.

In practice the determination of R is at times somewhat difficult, owing to its being made up of a number of different resistances—wires, electrodes of various kinds, &c., &c. In electrical measurements, the unit of resistance is called the Ohm, and its amount is that offered by a column of pure mercury of a certain length and sectional area. The unit of electro-motive force (E.M.F. or E) is the Volt, and, for practical purposes, may be taken as the E.M.F. of a single cell of Daniell's battery in good working order. As before pointed out, *the size of the cell has no influence whatever* upon its E.M.F.—a point too often quite lost sight of.

Probably the first occasion upon which public attention, and even the attention of electricians, was drawn to the need of measurement when using electricity for medical purposes, was in a paper entitled "On Measurement in the Medical Application of Electricity," by Dr. W. H. Stone, physician to St. Thomas's Hospital, and Dr. W. J. Kilner, read before the Society of Telegraph and Electrical Engineers, on March 9, 1882. Many leading electricians were present, who expressed their strong sense of the great value of Dr. Stone's experiments, and of the great progress which had been made in the medical application of electricity, since it was thus shown to be capable of being so exactly measured, and expressed in terms familiar to electricians.

To describe the way in which the actual measurements of Volts and Ohms are made would be beyond the scope of these articles, since it would involve an amount of technical detail uninteresting, and, perhaps unintelligible, to many readers. It is sufficient to say here that the principles of the instruments employed, galvanometers, voltameters, &c., have been already described in Articles III. and IV. of this series, and that in making the measurements, careful comparisons are always made with standard instruments. One such standard is called a resistance

box, and by slight alterations in it, resistances of from 1 Ohm up to 100,000 Ohms may be measured. For E.M.F., a standard cell of peculiar construction is used, with an E.M.F. of 1·457 Volt. For special kinds of measurements, in which may be included medical ones, it is possible to contrive instruments on which may be read off, with little or no calculation, the amount of current that has passed through a given circuit in a known time, or is passing at a particular moment. Dr. J. A. Fleming (of the Edison Light Company) has paid special attention to the construction of such instruments suitable for medical purposes, so that it will be possible in future for a medical man to prescribe with certainty a given dose of electricity; one is a galvanometer of special construction, and the other a new kind of voltameter, in which the gases evolved from the decomposition of water are collected. The unit of current is called the Ampère—hence, from Ohm's law :—

$$\text{Current in Ampères} = \frac{\text{E.M.F. in Volts}}{\text{Total circuit resistance in Ohms.}}$$

In the course of some experiments with Mr. Pulvermacher's appliances, it appeared that the electro-motive force of his elements, whether chain-bands or chain-batteries, was in each case as nearly as possible one Volt per element, and, as both his bands and chain batteries contain a number of elements connected together in series, their E.M.F. may be obtained with a near approach to accuracy by counting the number of separate elements in each appliance. The same remark would apply to a number of cells of Daniell's battery, joined up in series. The E.M.F. of the medical Leclanché batteries previously alluded to is about 1·5 Volt per cell, and that of a so-called medical battery with zinc and carbon, especially constructed for the use of medical men, was, under the same circumstances, about 1·3 Volt. It should be carefully noted, however, that when the circuit is kept closed for any time, as is usually the case in the medical applications of electricity, the E.M.F. of most batteries falls very rapidly, from the internal polarisation explained in former articles. Daniell's battery is one of the very few which is tolerably free from this defect, and Pulvermacher's chain-bands, &c., are also, in consequence of atmospheric depolarisation (article V.). The internal resistance of a battery varies with its liquid contents, and, other things being equal, depends much upon its size; that of a quart Daniell, for example, being only about 2 Ohms, while that of a Pulvermacher element of the ordinary small size may be as much as 70 or 80 Ohms. As pointed out in the last article, although this would be a serious disadvantage to their use where the external resistance was small, it is a matter of comparatively small moment where they are employed on circuits of high resistance, such as the human body; hence our readers will be quite prepared for the statement that with four or five such tiny elements arranged in series, the writer was able to make perfectly distinct galvanometer (*i.e.* telegraphic) signals through a circuit exceeding in resistance that of an Atlantic cable!

A series of very careful measurements were made with some of those so-called electric belts before alluded to, containing discs or plates of zinc and copper (or other metal) attached to a band of some strong textile fabric, for which it is claimed that an electric current is excited by them when the discs are worn in contact with the skin. As might be expected, the experiments were almost negative in their result; but when the skin was exceedingly moist, and extremely delicate instruments were used, a minute current was detected, amounting to a few hundred-thousandths of an Ampère. Even this minute current was, from the construction of the belt, confined to two or three square inches of the surface of the body.

Allusion has been frequently made in this series of articles to the enormously high resistance of the epidermis, or outer scarf-skin, *in its normal condition*. In that state, as is well known, the cells which compose it are comparatively dry and hard, and in that condition scarcely allow any electricity to pass; but when the spaces between these cells, as well as between the cell-walls themselves, are filled up with water, or, still better, with some liquid whose conducting power is greater than that of water, the current passes readily through the skin. Such a condition, however, is only attained by a somewhat prolonged soaking of the skin in water, or in some liquid conductor as, *e.g.*, salt and water. The following experiment illustrates this. Into the feet of a pair of socks were fastened soles of tinfoil, connected with a constant-current battery and with measuring instruments. The socks having been put on, and the experimenter standing in them, the resistance in this circuit was measured with the dry skin, and found to be 10,300 Ohms. The feet were then put into two separate vessels of salt and water, and the resistance was measured at frequent intervals, with the following results :—

	Min.	Ohms.		Min.	Ohms.
Dry skin	—	10,300	Salt and water.	25	1,470
Salt and water ...	1	4,300	,,	30	1,400
,, ...	5	2,500	,,	35	1,290
,, ...	7	2,100	,,	40	1,250
,, ...	10	1,900	,,	45	1,230
,, ...	15	1,720	,,	50	1,200
,, ...	20	1,540	,,	60	1,190 to 1,200

The practical conclusion from this experiment is that five minutes' immersion in salt and water reduces the skin resistance by more than 75 per cent., and ten minutes' immersion by more than 80 per cent.; or, in other words, that after five minutes' soaking, *four times as much current passed;* and after ten minutes, five times as much, as with a dry skin, with the same battery. Several other experiments of a like character were made on other parts of the body with similar results, all showing the *paramount necessity of thoroughly soaking the skin* before applying the current. Experiments with electrodes of various sizes showed what a great influence the size of the electrodes in contact with the skin had upon the amount of current passing; and also that when they were sufficiently large (a few square inches in surface) the prolonged action of a powerful current did not inflame the skin, nor did it affect its conducting power in any perceptible degree. Small electrodes, however, with a powerful current, inflamed the skin locally, and rendered it a better conductor.

In what has been already said, no mention has been made of the measurement of induced, or rather of alternate, currents. This is a more difficult matter than with continuous currents, and is best done with an electro-dynamometer which depends for its action upon the repulsion between two wires in which currents are flowing in opposite directions. The description of the method, however, would be out of place here.

In the next article of this series, we hope to give our readers some account of Professor McKendrick's lecture on Galvani and Animal Electricity, delivered before the British Association for the Advancement of Science at its Southport meeting, in which lecture the audience was referred for further information upon certain points, to this series of articles in HEALTH.

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HYDROPHOBIA: ITS NATURE, CAUSES, AND TREATMENT.

By Dr. Andrew Wilson, F.R.S.E.

SIXTH PAPER.

Our papers would be incomplete without a reference to the means adopted for the prevention and cure of hydrophobia, seeing that the previous statements naturally lead up to such a conclusion. We have already indicated a very important duty—not merely on the part of the public at large, but especially on that of the police—at the outset of these remarks—that of distinguishing between a case of true rabies and where an unfortunate dog is suffering from a fit, or, what is a more common case, where a dog pursued and hunted by boys is regarded as mad. If the public have to choose between the alternatives of "mad dog" and "dog in a fit," they will be on the correct side in nine cases out of ten if they adopt the latter opinion. Rabies, after all is said and done, is not a common affection, but is one, nevertheless, which a diseased public imagination will cause to be regarded as alarmingly prevalent. Suppose, however, that a rabid dog has inflicted a wound, the main and important question of "what is best to be done" has to be answered on the spot, and, it may be, by the non-professional bystander. It argues powerfully in favour of the movement for teaching the principles of human physiology in all our schools, that the answer to this question is readily forthcoming from a consideration of the subject of the blood circulation, and of the means to be taken for preventing the diffusion of the virus through the system. The rules to be acted upon in the case before us are those which teach us the right method of treatment in all cases in which a poison has gained admittance to the circulation. Rule first reads thus:—Prevent the diffusion of the poison through mechanical and other means. All surgeons agree in recommending immediate *excision*, *i.e.* the cutting out of the bitten part, as the safest procedure. To this rule there can be no difficulty or hesitation in assenting, provided there are forthcoming the surgeon and his anæsthetics. By the use of the latter all pain is avoided, and the treatment thus indicated, apart from the question of pain, is that considered the most effective by all authorities. Sir Thomas Watson has a very striking and forcible passage regarding the treatment of the bite of a rabid dog:—"For my own part," says Sir Thomas, "if I had received a bite from a decidedly rabid animal upon my arm or leg, and the bite was such that the whole wound could not be cut out or thoroughly cauterised, my reason would teach me to desire, and I hope I should have fortitude enough to endure, amputation of the limb above the place of the injury."

But suppose medical aid is not forthcoming, what is then to be done by the bystander? The answer is, tie a bandage tightly *above* the wound, for the purpose of arresting the venous circulation, which is, of course, tending to diffuse the poison through the circulation. The poison should then be either destroyed by cauterisation of the wound, or be removed therefrom by suction. Remembering, however, the possible risk of infection through the mucous membrane, the cupping-glass should be preferred as a means of suction. Next, try to wash away, as soon after the infliction of the wound as possible, the poisonous material. Probably the best method of attaining the latter result is that of placing the wounded part under a strong douche or stream of cold or tepid water, and of allowing the water to play with some degree of force on the wounded surface for at least an hour or longer. Thereafter, according to Mr. Youatt's belief, the safety of the sufferer would be secured by having the wounds well cauterised with nitrate of silver (lunar caustic), a substance which, in his own hands, proved eminently successful in the treatment of dog-bites. There could be no objection in the treatment of dog-bite to using a red-hot coal or iron for the purpose of cauterising the wound and destroying the poison. The actual cautery, it may be added, is by no means so painful a procedure as is commonly supposed. The common-sense rules of first and speedily adopting measures calculated to eliminate the poison from the seat of the wound, of arresting its diffusion through the blood-vessels, and thereafter of securing the further immunity of the wounded part by destroying as much of the surrounding tissues as possible should be borne clearly in mind. Curare, the famous arrow-poison, has been employed with success in one case, and high authorities agree in recommending the use of the Turkish bath by way of assisting in the elimination of the poison. But the chief matter which concerns the public at large is that of the means to be used on the spot, the after-treatment being a matter for the especial consideration of the physician.

The conclusions regarding hydrophobia to which these remarks lead, may be summed up in the statements, firstly that it is an affection respecting which much popular misconception exists, and that in consequence a large amount of unnecessary fear and alarm prevail regarding its occurrence; secondly, that hydrophobia is in ordinary cases a curable affection, provided prompt measures are used for its cure; thirdly, that the phenomena of the disease point to its clearly specific nature, and to its being derived in man exclusively from the diseased secretions of rabid dogs and of allied animals; and, lastly, that the best means for ensuring the public safety consist in the widespread knowledge of the nature of the disease and of the measures to be adopted for the prevention and cure of the disorder.

A highly important piece of final advice is that which enforces the wisdom of seeing that a dog, suspected of being rabid, and which has bitten a person, *should not be destroyed*, but should be tied up and carefully watched. If the dog is in good health and has simply bitten the person through anger, the preservation of the animal and its subsequent health will show that the case was not one of rabies, and will save the bitten person many continuous pangs of dread and fear. If, on the contrary, the dog does prove to be rabid, its seclusion will most clearly demonstrate the fact, and it can then be mercifully destroyed, whilst the patient can be attended to, and remedial measures and precautions duly observed.

"Knowledge is power" in truth, in the presence of the sudden danger which a rabid dog or a serpent's tooth, or indeed any other untoward accident, may bring. The knowledge which points the way of safety can in no case be regarded as exaggerating an evil, even although such knowledge deals with details which, to non-professional readers, may appear unpleasant, and which usually fall to be considered by the physician and surgeon alone. Whilst the diffusion of technical information as a means of averting disease and death may be regarded as exemplifying "saving knowledge" of the most valuable kind.

"How to Obtain Light from Coal Gas," is the title of a small *brochure* by Mr. A. Clarke, 30, Watling-street, London. It may be profitably perused by all consumers of gas, indicating as it does briefly but clearly, the means by which the highest illuminating power may be produced with the least expenditure of gas. The author's theory of the proper method of burning coal gas as an illuminant is summed up in the following observation: "Reduce it to 'a moderately low pressure' before it reaches the point of ignition, where it should be *heated* before being consumed."—[Advt.]

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

REMARKS ON THE VEGETARIAN CONTROVERSY.

By E. M. Swanwick, M.R.C.S.E.

In these days, when everybody is "enquiring within" upon everything, and matters touching on health are much to the fore, it would appear not inopportune to offer a few remarks on the subject of vegetarianism; and to discuss the *pros* and *cons* for the general adoption of a vegetarian diet, as recommended by an increasing number of the inhabitants of this country.

In a single short article it would be impossible to dive deeply into the sea of controversy surging around us; yet the leading features of the surface may be a little more than enumerated.

The primary point of the vegetarian doctrine is, that in the comparative study of the anatomy of man and of different animals we find man allied with the fruit-eating animals by the shape of the teeth, which—as in the apes—have rounded cusps on the grinders; that we have no sharp, saw-like teeth, as in the carnivora. By argument from the teeth alone we should say, then, that flesh was not the food best adapted for us to employ as our sole diet. This view is confirmed by experiments in physiology.

Granting that an average man in this country excretes 4,000 grains of carbon daily, and 300 grains of nitrogen, and that he assimilates sufficient meat to supply all the carbon excreted, he would at the same time assimilate considerably more nitrogen than his system required, under ordinary circumstances, and in so doing would throw injuriously hard work on his nitrogen-excreting apparatus—the kidneys. There are mixtures of vegetable foods which would give the exact proportions of carbon and nitrogen required for the support of the system, but the energy required to assimilate the protoplasm of vegetables to that of man is considerably greater than that required to assimilate the protoplasm of animals. This is indicated by the great length of intestine furnished to purely vegetable feeders. In the comparative ease of digestion of animal and vegetable albumen, in the form of foods, an interesting experiment may be tried. Take half-a-pound of lean meat, boil it so as to have as little loss as possible, and eat it for dinner with a little white bread to form mixed food. Next day take six and a-half ounces of beans, and boil them; next day seven ounces of peas. These require no accompaniment of bread. Each of the above represents two ounces of albumen. The after sensations will tolerably well express the quality of the digestion and assimilation. As we can more rapidly convert the potential energy (energy of chemical separation) of meat into our own kinetic energy (or energy of chemical combination), we say that meat is a more stimulating diet than vegetables. If a man is not doing sufficient work to expend the amount of energy necessary for the maintenance of health, he would probably be stronger and in better condition on a vegetarian diet. If, however, he requires all his physical energies for his occupation, it is an economy to substitute the more easily assimilable meat for part of the nitrogenous vegetable diet, if he is able to digest it more easily. The nitrogenous vegetables are with most very hard of digestion, and largely pass through the alimentary canal undigested.

In comparison with the apes, our salivary glands are not so fully developed, which points to a less proportion of vegetable food being adapted to our wants. Yet even the apes eat some animal food when they can catch small birds and insects.

Again, the stomach of man is not shaped like the true herbivorous stomach, nor is it of quite the texture of the carnivorous stomach. In the apes "the stomach is less elongated transversely and less generally constricted in the middle than in man; but the cardiac cæcum is most developed in the former, and especially in the lowest tribes." (Prof. R. E. Grant, "Comparative Anatomy.") The herbivorous animal which possesses a stomach most nearly approaching in shape to that of man is probably the horse. Here, however, the end on the left side of the gullet (the cardiac cæcum) is very much larger in proportion than the human, as in man it is larger than in the cat-tribe of carnivora. In the ruminating herbivora the stomach is compound, and the food takes a double journey from the mouth, thus practically lengthening the already enormously long alimentary canal. Again, in purely vegetable feeders we find an extremely capacious, convoluted colon, or large intestine, continued past the juncture of the small with the large, in a more or less voluminous cæcum, varying according to the proportion of herbaceous material which the animal requires to ingest. Thus in the horse the large bowel is about twenty-three feet long—say three times the length of the animal without its legs; whereas in man his five and a-half or six feet of large intestine is not more than twice as long as his body and head, and has a cæcum of the diminutive length of two and a-half inches. If, then, we are to judge from the comparative anatomy of the digestive organs, we should have to say that man is as distinctly non-herbivorous as he is non-carnivorous, that he tends more to the carnivora side of the scale than the apes do, and that his digestive system seems to be well adapted to an omnivorous diet. His jaws have not the massive muscles which carnivora and apes employ in the mastication of their food, and his food is probably not intended to be so hard. He is a cooking animal by nature, and his grain need not be eaten raw, nor is he required to crack bones. He alone, of all animals, knows how to light a fire. He puts on warm clothes, and eats meat, in cold climate; he indulges sparingly in meat, as a rule, and clothes lightly, or not at all, in warm climates.

Even did the structure of man's alimentary canal not indicate a mixed diet, we could not say from structure alone that any particular kind of food was pointed to by nature. For we find other animals very widely distributed which employ a diet differing with the various climates they inhabit. Thus the polar bear is exclusively carnivorous, the European omnivorous, and the tropical lives chiefly on roots, fruits, honey, insects, with an occasional flesh meal when it can obtain it. Yet the structure of the teeth and the other parts of the alimentary system are alike in all, and these indicate omnivorous habits. On careful examination we see, then, that the anatomical argument of the vegetarians falls to the ground. What can be said of the argument from the chemical analysis of food-stuffs! We have seen that all foods are not equally digestible, nor are they equally assimilable. Chemical analysis of food-stuffs is apt to lead the unwary very much astray. From the quantities of carbon and nitrogen given above as secreted daily by an average man, by chemical analysis we

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

might conclude that a little over 4,000 grains of charcoal a day would satisfy the carbon, and 857 grains of nitrate of ammonia would supply the nitrogen required. I have so often seen the argument from chemical analysis held up as a proof of nutritive value, especially Liebig's analyses, that I could not withhold an extreme instance. Also in a book on vegetarianism occur the words, "We find nitrogen supplied in nearly all kinds of vegetation; and, in case of accidental scarcity in the vegetable kingdom, in the atmosphere which surrounds us," totally ignoring the fact of how little of the nitrogenous material of vegetables is assimilated, and that none of the nitrogen contained in the air, as far as we know, takes any part in our nourishment. Again, gelatin would seem by analysis to be a good nitrogenous food. Dogs will *starve* on pure gelatin. Add a teaspoonful of good meat gravy to each meal of gelatin, and they will be well nourished.

As a general rule, the meat-eater lives more rapidly than the vegetarian, is much more likely to over-feed and give his excretory apparatus too much to do, and so far is more liable to disease. This is a matter he should take into consideration, for there is no doubt that most of us eat too much meat for continuance of health, especially so if the animal has not been carefully fed and nurtured, and properly killed, with sufficient loss of blood. It is here probably, and in insufficient or improper cooking and keeping, that danger from ptomaines* arises. These are probably most dangerous in badly killed and cooked meats on the second, third, and fourth days.

To conclude: Man is naturally a *tropical*, fruit, and root-eating animal, possibly also grain-eating; but his organs are arranged for living on any part of the earth's surface, keeping up his animal heat on animal fats in the north, supplying material for perspiration by consuming vegetable oils in the warm climates. Nature does not provide vegetables in large quantities in arctic climates, but supplies blubber. In tropical countries fruits abound. The whole question, then, is one of economy of energy, for each individual to solve for himself by experience.

WATER AND TEA *v.* ALCOHOL.

A singular match recently took place in the harvest field as to whether a man could work better on water or alcohol. The contest, which was under the auspices of the Church of England Temperance Society, resulted in favour of the man who took beer. Thus proving, if any proof were needed, that alcohol is a true food, as was affirmed by no less an authority than the late Dr. Druitt, and established beyond a doubt by Dr. Parkes in his experiments on a young healthy soldier—small quantities of alcohol were found to increase the appetite and rouse the action of the heart and capillary vessels, accelerating the circulation; but in large quantities, as when narcotism began, the symptoms were distressing. Another point in favour of a moderate allowance of alcohol—especially when one is suffering from *ennui*—is, that it undoubtedly "gladdeneth the heart of man" as is affirmed on the highest authority. One, therefore, feels almost tempted to say with Shakespeare, "good wine is a good familiar creature, if it be well used; exclaim no more against it." It appears that the well-known pedestrian, Mr. E. Payn Weston, is about to undertake a walking tour through England and Wales, with a view, he asserts, to demonstrate the superiority of tea over beer and alcoholic drinks in general during periods of prolonged muscular exertion. In face of such crushing evidence to the contrary, nothing Mr. Weston can say or do will in the slightest degree tend to shake one's faith in physiological facts — that malt liquor, not only from the fact of the alcohol it contains—from 5 to 15 per cent.—but also from the large quantity of malt extract found in it, ranks consequently as a "flesh former," hence it is frequently prescribed (as was recently pointed out in our columns by Dr. Philip Foster) in convalescence from wasting disease, extreme thinness, feeble digestion, or where there is difficulty in maintaining the animal heat. Tea, as was pointed out by the late Dr. Edward Smith, F.R.S., is hurtful in the absence of food, after a long fast (as at breakfast), to the poor and ill-fed, the spare, and the young. *It is not adapted to sustain exertion*, to prison dietaries, to low temperatures, or to hot climates, when the appetite is defective and the skin active, or to those who perspire too freely, neither should it be taken with our principal meal. It is useful to the corpulent, the over-fed, after a full meal at the end of the day, when the food has accumulated in the system, when digestion and other vital changes proceed slowly; for the sedentary, for those who do not perspire freely, and for those who eat much starchy food.

Mr. Weston may profit by following the advice contained in 1 Timothy, v. 23: "Drink no longer water, but use a little wine for thy stomach's sake."

* Cadaveric alkaloids; alkaloids which form in a dead animal body.

Freckles.—Those who are troubled with freckles should know that keeping the skin moist with a lotion of hyposulphite of soda, of the strength of half a drachm to the ounce of water, is highly useful in removing these disfigurations. Another lotion, for outward use only, (to be carefully used from its poisonous nature) is composed of corrosive sublimate, three grains; sal ammoniac, two drachms; tincture of benzoin, two drachms; and rose-water to make up eight ounces.

Much has been said and written of late years on the importance of having sanitary inspectors of schools, and every sanitarian recognises it. It only need be added in this place that the inspection should begin with the site; and the inspector should possess such qualifications, and be backed by such authority, as would secure the best practical conditions of site, construction, and fittings; and he should be so constant in the exercise of his office as to be able to recognise and prohibit at the outset any and all conditions in conflict with the health of the teachers or pupils. But all that has been or can be said in favour of such service for public schools is of equal force in relation to other public institutions, and to many private ones—if these may be made to include all open to public patronage—*all* educational institutions (private as well as public), churches, assembly halls, court-rooms, jails, hospitals, asylums, charity institutions, hotels, lodging-houses, and tenement houses.

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

OUR MEDICAL NOTEBOOK.

EASY HINTS FOR THE TREATMENT OF COMMON COMPLAINTS.

The Treatment of Stye.—Recent medical experience in the treatment of that familiar affection the common stye, affords us information worth remembrance. The plan of treatment recommended is to dispense with hot fomentations, &c., and to apply locally tincture of iodine to the lids, care being taken to keep them apart until dry. A few applications in the twenty-four hours is often sufficient to arrest the development of the stye.

In the treatment of **Persistent Cold in the Head, or Nasal Catarrh,** when there is much discharge from the nasal passages, we are advised to use the spray-producer with the following solution:—℞ Carbolic acid, one grain; glycerine two drachms; water, two ounces. After the passages are clean, a small quantity of Vaseline is melted in the bowl of the spray-producer, and two to five drops of the pinus canadensis mixture added. The mixture consists of:—℞ Pinus canadensis, fifteen grains; glycerine, half an ounce; carbolic acid, half a grain; water, an ounce and a-half. This is to be applied by the spray to every part.

Castor Oil and Glycerine as a Purgative.—The value of castor oil as a family medicine is undoubted. Referring to its use, Dr. Soper says:—"After many months' experience, I now feel justified in bringing to your notice the great advantages of a combination of the above two drugs in equal proportions to act as a purgative. Glycerine has great therapeutic value, especially in its solvent properties, and this combination renders it especially valuable. In regard to castor oil, I think a great mistake has been made in the largeness of dose administered, and in this mixture only half-a-teaspoonful is required combined with an equal bulk of glycerine. In all cases of chronic constipation, piles, &c., it has proved most useful. I have also given half-teaspoonful doses in the early stages of bronchitis, which seem to promote exudation from the tubes, and is certainly expectorant. My great difficulty hitherto has been the obstinacy with which the mixture becomes a mixture, as it can only be made by placing the bottle in hot water and violently agitating."

Parsley as a Medicine.—Dr. Stanislas Martin, after observing that the use of mineral waters interrupted the secretion of milk, states that, as an external application, parsley-leaves act most efficaciously in dispersing it, and that they were used for this purpose by the Roman matrons of old. The breasts should be covered with freshly plucked leaves, and these should be renewed several times a day as fast as they begin to fade. The dispersion of the milk soon takes place. Dr. Dujardin-Beaumetz confirms Dr. Martin's statement, and adds that in Asia Minor parsley in the form of large cataplasms is used by the women as an ordinary domestic remedy.

Remedies for Severe Itching.—This troublesome affection may be cured by the use of the following (taken from a French journal):—Milk of almonds, 500 grammes; corrosive sublimate, 0·25 grammes; ammonium chloride, 0·25 grammes. Or, glycerine of starch, 60 grammes; bismuth subnitrate, 5 grammes; zinc oxide, 5 grammes. Or, infusion of mallow, 1 litre; cherry-laurel water (filtered), 50 grammes; borax, 10 grammes.

Milk and Eggs in Mind Troubles.—Dr. Clouston, in the Annual Report of the Edinburgh Royal Asylum for 1882, draws attention to the good effects produced by the liberal use of milk and eggs in the case of nervous patients. He gives to such patients as many as a dozen eggs, and as much as six or seven pints of milk a day. When this form of treatment is associated with plenty of walking exercise in the open air, a great increase of weight often takes place. "A gain," he says, "of two or three stone is quite common, and usually there is an immense advance along with this in nervous stability, in contentment and in self-control, even if a complete recovery does not take place." "The greater my experience becomes," writes Dr. Clouston, "I tend more to substitute milk for stimulants. I don't undervalue the latter in suitable cases; but in the very acute cases, both of depression and maniacal exaltation, where the disordered working of the brain tends rapidly to exhaust the strength, I rely more and more on milk and eggs made into liquid custards. One such case this year got eight pints of milk and sixteen eggs every day for three months, and under this treatment recovered. I question whether he would have done so under any other. He was almost dead on admission, acutely delirious, absolutely sleepless, and very nearly pulseless. It was a hand-to-hand fight between the acute disease in his brain and his general vitality. If his stomach could not have digested and his body assimilated enough suitable nourishment, or if he could not have been taken out freely into the open air, he must have died. But to-day he is fulfilling the duties of his position as well as he ever did in his life. All acute mental diseases, like most nervous diseases, tend to thinness of body, and therefore all foods, and all medicines, and all treatments that fatten, are good. To my assistants, and nurses, and patients, I preach the gospel of fatness as the great antidote to the exhausting tendencies of the disease we have to treat, and it would be well if all people of nervous constitution would obey this gospel."

The Medical Uses of Figs.—Professor Bouchut speaks of some experiments he has made, tending to show that the milky juice of the fig-tree possesses a digestive power. He also observed that when some of this preparation was mixed with animal tissue, it preserved it from decay for a long time. This fact, in connection with Professor Billroth's experience in a case of cancer, which was so excessively foul smelling that all his deodorisers failed, but which on applying a poultice made of dried figs cooked in milk was entirely freed from odour, gives an importance to this homely remedy.

THE DIAMOND.—The diamond is pure carbon, or charcoal crystallised. It is among the rarest of all known substances, and carbon is among the most abundant. We can have a roomful of pure carbon for sixpence, but a bit of pure crystallised carbon the size of half a walnut is worth many thousand pounds. A diamond requires great heat to burn it, but when it does burn, it consumes utterly. Its whole substance changes into that kind of gas which is pumped into soda-water, and is produced naturally in champagne.

HEALTH LECTURES TO LADIES.—In connection with the Liverpool Science and Art Classes there will meet, during the winter session, special classes for ladies for the study of Hygiene and Animal Physiology. These classes will be conducted by Miss HELEN FRYER, who, on Monday last, in the Lecture Hall of the Philharmonic-buildings, 1, Falkner-street, delivered a lecture introductory to both courses, and on Monday next the first lecture of each course will be given.—[ADVT.]

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

HEALTH AND LOCALITY.

Mr. W. Eassie, C.E., in a recent address delivered before the Sanitary Institute of Great Britain, said:—It is singular, taking England as an example, that the distribution of certain diseases largely depends upon the absence or otherwise of valleys and rivers, along which the winds can sweep without interruption; in other words, upon the physical conformation of our island as it was left at the end of the last geological epoch, when it became fit for the residence of man. I will mention one or two instances, and the lessons which they teach would amount to this, that before making choice of a locality for people subject to certain ailments, it is wise to take its geological structure into consideration. Mr. Alfred Haviland says, after years of study on this matter, that "those coastal counties most exposed to the prevailing winds are most free from obstructions to their full operations, have the least mortality"—due to heart disease, "whereas, those coastal counties, such as those along the south coast, which have barrier-like rocks and other characters which tend to interfere with the full sweep of the sea winds, are those which have a high mortality." Where the precipitous and wall-like rocks are intersected by every variety of sea inlet opening into wide valleys, through which the winds can scour along, there is a lower mortality. He also remarks that, "coincident with the lowest exposure to the sea, as in the Midland Counties, is the highest mortality of heart disease in those counties, and the lowest amount of mortality is coincident with the greatest amount of exposure. The counties which lie immediately between these extremes have also an intermediate amount of death-rate." His conclusions have been worked out with the extremest care, accompanied by maps. As an example, it may be instanced, that the East Yorkshire group of counties, which is bounded by a precipitous coast of oolite and chalk cliffs, say from Whitby to Bridlington Bay, and has no inlets, with an inland-directed water-shed, has a high mortality.

The low coast of sea-board, between Bridlington and the Isle of Sheppey, differently situated in respect of offering no check to the winds, has a very low mortality. These conclusions are well worthy of attention and of serious moment, seeing that the mortality from heart disease and dropsy amounts to more than one-seventeenth part of the whole mortality from all causes. London, as a division, has a low mortality, and coincident with this it is traversed by the great sea inlet, the Thames, with a twice a-day average rise of the tide between 16 and 20 feet.

About fifteen years ago Dr. Buchanan examined three of the southern counties of England with regard to the distribution of phthisis or consumption, and, without going into the details of his report, I will give his conclusions, which are as follows:—

Within the counties of Surrey, Kent, and Sussex there is, broadly speaking, less phthisis among populations living on porous soils than among populations living on impervious soils.

Within the same counties there is less phthisis among populations living on high-lying pervious soils than among populations living on low-lying pervious soils.

Within the same counties there is less phthisis among populations living on sloping impervious soils than among populations living on flat impervious soils.

The whole of the foregoing conclusions combined into one—which may now be affirmed generally, and not only of particular districts—that wetness of soil is a cause of phthisis to the population living upon it.

Mr. Haviland, a few years ago, writing upon phthisis in females, says that "the warm, fertile, ferruginous, red sandstone tracts of country are remarkable for forming the sites of the most extensive series of low mortality groups throughout England. The high elevated ridges of non-ferruginous and unfertile carboniferous limestone and coal, and the elevated, hard, unfertile, non-ferruginous Silurian forms the sites of the most extensive series of high mortality groups."

Sudden Changes in the Colour of the Hair and Skin.—At a recent meeting of the Academy of Medicine of Dublin, Dr. W. J. Smyly read a paper on sudden change in the colour of the hair of an infant. The child was perfectly healthy, to all appearance, until he was four months old. He was then attacked with acute inflammation, followed by suppuration in the left temporal bone, with high fever and profuse perspiration, and paralysis of the left side of the face. One morning (Nov. 1 last), the hair on the right side of the head was discovered to have undergone a remarkable change from its original mouse-coloured hue to a reddish-yellow. The right eyebrow was similarly affected, and the skin of these parts—as well as that of the right hand—was bright yellow. The pillow also was saturated with a reddish-yellow perspiration. The suggestion offered as to the possible cause of this remarkable change in the colour of the hair was that the perspiration, which was of a peculiar colour, and probably of abnormal chemical constitution, not only destroyed the original pigment, but also dyed the hair a reddish-yellow colour. Dr. Banks referred to a case which had come under his notice—that of a young woman. Half of the lashes of one of her eyes became snow-white, which she attributed to the annoyance suffered from the persistent gaze of a "wall-eyed" admirer who had white lashes on the defective eye. Dr. Walter Smith related the case of a boy in whom the skin of the lobes of both ears, and that of the back of the neck, was of a sulphur-yellow, the downy hair being of a bright yellow. The hair of the head was brown. The yellow colouring could be readily removed by a moistened cloth, but no washing could decolourise the skin; nor did ether or chloroform produce any effect. He exhibited specimens of the hair. He also referred to a case of red discoloration recorded by Wilson. After relating the case described by Darwin, in which the hair of a criminal, brought out for execution, turned white in the presence of the spectators, he said he could not agree with Dr. Smyly in ascribing bleaching properties to the perspiration, but did not give any explanation in lieu of it.

Pownceby's Pure Wines and Brandies, as analysed, and especially selected to suit medicinal purposes, may be obtained in small quantities at wholesale prices. Free delivery within fifty miles. Circular and price current by post from Pownceby & Co., Wine and Brandy Importers, 183, Oxford-street, London, W.—[Advt.]

Hampstead.—High and healthy position, near the Heath. Stanfield House School for sons of gentlemen. Home comforts; and the health of pupils carefully studied. Individual teaching. Principal: Mr. W. R. Marshall (several years' experience), assisted by eminent masters. Prospectus on application.—[Advt.]

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

PHYSICAL EXERCISE.

RIDING, BICYCLING, TRICYCLING, AND LAWN-TENNIS.

By C. W. Cathcart, M.B., F.R.C.S.

(*Lecture on Anatomy in the Edinburgh Medical School.*)

SECOND PAPER.

Riding on horse-back, for those who are able to afford it, is in many ways a most valuable exercise. It is especially suited for those who are unable to walk far or fast. The effort to maintain the seat and preserve the balance of the body affords a useful and pleasant exercise, while the rapid change of scene and the effort necessary to guide the horse, afford a mental diversion which has already been alluded to as very important. The quick passage through the air is most exhilarating, while the amount of necessary jolting is said to be of much benefit to a sluggish liver.

In bicycling and tricycling we have forms of exercise which are similar to that of riding on horseback, although requiring a greater effort of the legs. The machines now used are light and well-made, and almost incredibly long distances may be covered on them in very short spaces of time. Of the two, bicycles are the faster and easier, especially for long distances, but there is a certain element of danger connected with them, and a greater amount of activity is required in mounting and dismounting, which makes them less available for middle-aged or delicate persons than for the young and active. On the other hand, the art of riding a tricycle is easily learned, and the machines are now so beautifully and carefully made in every detail of their mechanism that almost any one may take to them with pleasure and benefit. Many for whom horse exercise would be suited but who are unable to afford the luxury of a horse, may be able to buy a tricycle, and get as much benefit from it as from the living and more expensive steed. If any one wishes to ride a bicycle, he must be active, and if he is to avoid the risks of a fall must always ride with care and be especially circumspect when coming down hill. There is no evidence to show that ruptures or other injuries are apt to be caused by bicycle or tricycle riding more than by any other form of exercise; the rule applies here, as it does elsewhere, to do things in moderation and avoid undue violence and over-fatigue. Under our next head, *i.e.* "games involving running," most of the commoner games of children may be included. It is unnecessary to enumerate them, as our present purpose is merely to point out that they chiefly involve the use of the lower limbs. They are, however, admirably suited to children and girls, since they cannot be said to require any violence, and since they are entered into with great glee and are usually accompanied with abundance of shouting and laughter, thus increasing the action of the lungs in addition to what is required by the muscular exertion itself. If any word of caution has to be given it is to prevent cold being taken after these games. They are often played in the evening, and there is a great temptation for the players to sit down in the chill and damp air after having been overheated, which may prove most dangerous. Care should, therefore, be taken to prevent the risk of a chill after these games, and if possible the clothes should be changed to avoid the necessity of sitting in garments damp with perspiration.

As regards golf, that prince of games for men and boys, we can only speak of it with unqualified praise. No game that we know of can be carried on so late in life, and with such good results, and none brings with it a greater keenness of interest, enticing us on as it does from point to point over the fresh and breezy links, and giving us more and more delight each time we play. The exertion of swinging the club brings out the muscles of the whole body, while the attention and care required for each stroke, and the zest of a well contested match, give us the very best form of exercise and recreation, for those whose life during the greater part of the year is necessarily sedentary. Few are able to realise the intense interest with which golf players follow their game, until they have tried it for themselves, and then they find that what seems a very meaningless striking of a ball with a stick along the grass, is one of the most captivating and enjoyable games they could have imagined. Golf may be taken up at any age, but it is always better to begin young, and no youngster who can possibly get an opportunity should ever miss the chance of learning, even though he should not play regularly for years after. Wherever the land along the shore grows that short thick turf which is necessary for the game, and the ground is promising for a "links," it should be set aside as a national property, and be preserved with jealous care.

To conclude this brief sketch of the milder forms of exercise, we may say a word or two on lawn-tennis, and contrast it in passing with that almost extinct game of croquet. The two may be taken together because, although differing considerably as a means of exercise, they are very similar in the place they hold (or held in the case of croquet) in the social scale, if we may so express it. Both are available on level lawns all over the world, can be equally played by ladies as well as gentlemen, and are or have been made the opportunity for large social gatherings, under the name of croquet parties a few years ago, and lawn-tennis parties now-a-days. In lawn-tennis there are facilities for active exertion involving the legs, trunk, and right arm, and a constant and varying interest. In croquet, on the other hand, the exertion can never be said to be active, and is generally quite the reverse, the stooping position required being also bad for the chest, while the interest is for the most part intermittent, and is often anything but pleasurable. We do not wish to heap too much discredit on a game which is now nearly extinct, but in our experience and in that of many friends with whom we have compared notes, there is no game which is so provoking as croquet, none in which the effort to preserve the Christian graces is so much required, or so often without effect. What may be said for it is, that it affords a widely-available out-door amusement for both ladies and gentlemen, especially for those who are not strong enough for lawn-tennis, and for these reasons it may revive again to a certain extent, but never, we trust, to its former position as almost the only available lawn amusement for ladies and gentlemen together. One aspect of croquet we must not omit before we leave it, and that is the excellence of its matrimonial facilities. It not only brings ladies and gentlemen together, but by its inertness it gives them ample opportunities for conversation, while it affords, moreover, a most admirable test of sweetness and good temper.

Lawn-tennis is so well known and appreciated that it is

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more in the way of caution than of praise that anything requires to be said here. Unfortunately in many cases it is only too popular, and young people are apt to bring it into discredit by injuring themselves through playing it to excess. When we hear of the "lawn-tennis elbow," or "lawn-tennis knee," we must not suppose that there is anything specifically inherent in the game to produce these results. What it means is, that by the unequal and excessive use of any joint or muscle we may set up mischief in it, and when lawn-tennis is played to excess the joints and muscles most concerned are apt to suffer. Two or three hours per day at the outside ought to be enough to satisfy most people, but five, six, or seven hours, especially for ladies, is certainly too much. Since the right arm only is generally employed, efforts should be made to exercise the left arm and left side of the body to counteract this one-sided tendency, and the greatest care should be taken to avoid playing if any of the joints are strained, as the rapid turns and quick movements are apt to cause sprains and wrenches if they should have any tendency to give way. Those who have not been accustomed to active exercise should begin gradually. If they do, and if they play the game within reasonable limits, and supplement it with walking or riding, or some other form of exercise, they will find that lawn-tennis is one of the most valuable as well as the most fashionable of our modern forms of physical exercise.

(To be continued.)

Children's Minds.—In October, 1869, the Pedagogical Society of Berlin inquired by circular how many of the children who entered the primary classes had seen certain common animals, insects, and plants, public buildings, museums, parks, suburban pleasure-resorts, &c. Other questions related to the home, farm, natural history, God, Christ, prayer, and many such subjects. Profiting by this experiment, Mr. G. Stanley Hall, last September, undertook to ascertain the contents of children's minds on entering the Boston primary schools. Much pains was taken to collate such questions as would yield the best results, and to utilise the most skilful kindergarten teachers in putting the questions. Even with all these aids and cautions the results were often very amusing. Two tables are given by Mr. Hall, setting forth the words, and the percentage of children ignorant of them. The high rate of ignorance is absolutely astonishing. About ninety per cent. did not know where their ribs were situated, and seventy-five per cent. could not describe an island. Furthermore, those who knew certain facts—for instance, that cheese comes from the cow—apprehended them in the loosest manner, thinking, perhaps, that the cheese is squeezed from the cow as the juice from a lemon. The same ignorance or indefiniteness of knowledge marked the opinions of the majority of the children concerning natural phenomena, natural history, and physical experiments of the simplest kind. The author comes to the following conclusions:—(1) Children know next to nothing valuable at the outset of their school life; (2) children can best be prepared for school by familiarising them with objects; (3) teachers should carefully explore children's minds; (4) the concepts that are most common in the children of a given locality are the earliest to be acquired, while the rarer ones are later.

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, littl care."—*Sir Philip Sidney.*

The Drainage of a West-end Mansion.—In the immediate neighbourhood of Pall-Mall we recently visited the basement of a mansion belonging to a prominent member of the House of Peers, who had reason to suspect that the drainage was not in a satisfactory condition. To judge from external appearance, the house was in good order, and resembled in every respect hundreds of other similar residences. On removing the floor, however, it soon became apparent that the whole basement was honeycombed with elongated cesspools. A number of large brick drains ran in all directions, divided here and there, as a protection against sewer gas, by dip stone traps. These consisted of square holes about a yard deep and nearly as wide. In the centre a flagstone was inserted that reached down nearly to the bottom, thus forming a sort of syphon-trap; but, considering that about a cubic yard of sewage had to accumulate in this receptacle before any could flow out of the trap, the water had time to deposit the heavier particles held in suspension, and the traps gradually became blocked with hard, black sewage matter. The flow thus checked, the numerous brick drains, some two feet in diameter, also became choked up. Some of them were opened in our presence. They were full up to the top with black soil, that threw up poisonous gases on being touched with a spade. Several cartloads of this foul accumulation had to be removed, and all this from the basement of one single house and its adjoining stables. The largest drain went direct into the sewer without trap or any sort of interception, and brought back the sewer gas to the servants' hall by means of an aperture under the floor, where a sink-pipe was improperly fitted into the drains. A branch drain under the kitchen floor was leaking. In an ill-ventilated scullery, next to the kitchen, there was a sort of cesspool under the sink, two yards square and one deep, full of greasy, thick, and putrid deposit. The fall of the drain passing under the kitchen sink inclined in the wrong direction, so that the entire drains had to be filled before any liquid could get away into the sewer. In the larder there was another dip stone trap, full of solid deposit, that gave off dangerous effluvium through two ineffectual bell-traps covering the mouths of openings in the floor. Altogether the greatest ingenuity seems to have been displayed in laying down a needlessly-complicated network of drains, so contrived that the solids could easily accumulate in them, and that sewer gas could have every opportunity of pervading the whole house in a most insidious and complete manner. The owner of this mansion may be congratulated on having discovered the great danger to which all its inhabitants were exposed, and we only wish that these facts might be more generally known, for there are hundreds of other houses in an equally bad condition.—*Lancet.*

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Disinfection of Rags.—An agitation, based no doubt on the recent issue of the Government orders regulating the importation of rags from Egypt, has been set on foot for extending the provisions of such orders, or something like them, to rags of all kinds coming from foreign countries. Thus the Hull Sanitary Committee confirmed, at their last meeting, a report signed by the chairman, the

town clerk, the medical officer of health, and the borough engineer, which stated that, although few rags from Egypt find their way to Hull, large numbers of bales from other other countries, *e.g.*, Denmark, Germany, Belgium, Norway, and France, are received there, and that the authorities have no power to prevent this importation. The committee recommended that ample powers should be conferred on local authorities to prevent possible introduction of disease by cargoes capable of conveying infection. Sir Charles Dilke, replying to Sir Stafford Northcote on the 15th said that the question of restricting the importation of rags was under consideration; and, meanwhile, the Local Government Board have issued a memorandum by their medical officer, Dr. Buchanan, expository of the recent orders as to Egyptian rags, and Dr. Buchanan points out the importance of some place being ready for the first deposit of rags which may have to be landed. The health officer will have to be guided by his own inquiries in the time of collection and characters of the rags, whether any bale shall undergo disinfection or be destroyed. As regards disinfection, the following measures are suggested. 1. The bale should be exposed to heat in such a way that every article in it shall attain a temperature of 250° Fahr., and be kept at that temperature for two hours. The arrangement which gives greatest penetration of heat is the use of high pressure steam, more especially if the pressure be from time to time relaxed and reapplied so as to displace air. By this means it is possible to avoid so detailed a spreading out of the rags as would be requisite for efficiency with other processes. 2. The bale may be opened out and the whole of its contents be exposed to disinfection by a liquid agent; and this may either be water sustained for a while at boiling heat, or water containing in every four gallons one pint of the common clear solution of chloride of lime. In such chlorinated water, the rags should soak for some hours.—*British Medical Journal.*

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Breathing-space in Nurseries.—A room 15 ft. square and 9 ft. high affords ample initial cubic space for a nurse and two children; with good and careful management, a nurse, infant, and two other young children have occupied a bedroom of this size without detriment to health. No useless articles of furniture or of drapery were allowed entrance; both a dressing-room and a bath-room were close at hand, care was taken to keep the air of the room pure, no open vessels were allowed to remain, the door, never quite closed, admitted light and air from the passage, the two windows were partly open on the summer nights, and the fire always lighted before bed-time in the winter. Children from seven to nine or ten years of age may have separate bedrooms, and after that age a separate dormitory for each is requisite. A space of 14 ft. or 15 ft. by 8 ft. or 9 ft. wide permits of a bed 4 ft. wide to be placed between the door and the wall, and a fireplace in the opposite wall to be beyond the foot of the bed. No double-bedded room should be less than 15 ft. square, and no bedroom should be without a fireplace. A child until two years old must sleep with the nurse, and requires the same allowance of cubic space.

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In towns epidemics spread with much greater rapidity than they do in the country. Owing to the near proximity of the several inhabitants, the network along which contagion travels is so close that very few children escape when any pestilence is dragging the enclosures in which they live.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

SOME TRUSTWORTHY GUIDES TO HEALTHY LIVING.

One Thousand Medical Maxims and Surgical Hints, for Infancy, Adult Life, Middle Age, and Old Age. By N. E. Davies, L.R.C.P. and M.R.C.S. (London: Chatto & Windus). Price 1s.; cloth, 1s. 6d.

Mr. Davies tells us that the idea of his useful little work owed its origin to questions put to the writer by a non-professional friend. The experience of every doctor is the same. People are fond of asking questions of their medical men about themselves, their bodily structure, and, above all, their ailments, real or fancied. We do not suppose for a moment that this practice will ever become extinct; but we think Mr. Davies's book will go very far to supply intelligent persons with a large amount of highly useful information, concerning not only the simple treatment of ailments, but also regarding many interesting facts of their bodily structure and functions.

Mr. Davies has adopted the style familiar to all in the "Enquire Within" series of books. He dispenses his information in small, and, we are bound to add, satisfactory and pleasant doses. Here are a few quotations by way of illustrating our author's style:—

71. Every mother should learn to use the thermometer: it predicts fever and dangerous illnesses as a barometer does a storm. They are sold by chemists at 7s. 6d. each, and are known by the name of "clinical thermometers." *

72. The temperature of the body in health is a little under 98½°, marked on the thermometer with an arrow; when the heat of the body at rest exceeds 100°, or falls below 97°, excepting under very rare conditions, danger may be looked for, and medical advice should be sought without delay.

73. In using the thermometer, the bulb should be placed in the armpit next to the skin, and not touching any article of clothing, for five minutes, and the arm drawn over the chest; then the temperature of the body may be read off, and the mercury brought down again to the arrow by gently tapping the thermometer against the palm of the hand.

74. If the temperature of the body reaches 103°, fever, inflammatory action, or constitutional disturbance is severe; 104° or 105°, very severe; 106°, very dangerous; and 107°, usually fatal; and when it reaches 108°, death may be expected within twenty-four hours. These figures refer to males and females alike.

75. In the great majority of cases of fever or inflammation, the temperature does not ever exceed 106°.

76. In fever, when the temperature returns to its normal 98½°, the "crisis" is past, and convalescence commences.

These are useful hints to mothers, and, indeed to every one else.

Taking another selection at random, we find the following useful information given regarding a variety of interesting matters:—

897. Under ordinary circumstances, from three to four hours may be taken as the average time for the digestion of a meal in the stomach.

898. Food should be well masticated before being swallowed, as its admixture with saliva is necessary to digestion.

899. The indigestion of old people often arises from their want of teeth to properly masticate food.

900. The skin and the lungs throw off nearly 3 lb. of effete matter daily.

901. The kidneys of a healthy man, between 20 and 40 years of age, give out 52½ oz. daily.

902. In injury to, or disease of, either side of the brain, the paralysis is found on the opposite side of the body to the seat of the mischief.

* Mr. Casella, 146, Holborn-bars, and Mr. Dollond, 1, Ludgate-hill, London, sell "clinical thermometers," as described above, for a few shillings. Every family should possess one.

903. "Short-sightedness" depends on too great convexity of the lens of the eye, so that the image of any object is thrown too much in front of the retina—the surface which conveys the rays of light to the brain.

904. "Long-sightedness" is the reverse of the preceding; the rays are thrown beyond the retina.

905. Convex or concave glasses will remedy these several defects.

906. The human brain weighs, on the average, forty-nine ounces in the *male*, and forty-four in the *female*.

907. The "heart" weighs, in the adult male, ten ounces, and in the female nine.

908. The kidneys, in health, weigh four to four and a half ounces.

These extracts really describe the nature of this book better than any words of ours. What we may add, is to the effect that Mr. Davies is a safe guide in all the matters with which he deals; and the book is one which, not only from its character but also from its price, should find a place among the "handy books" of every household.

A Physician's Sermon to Young Men. By William Pratt, M.A., M.D. Fourth Thousand. (Messrs. Baillière, Tindall, & Co.) Price 1s.

That such a book as this was needed, and that it is certain to accomplish much and lasting good, no health-reformer will deny. The quacks who prey upon young men can only be legitimately fought and conquered by the diffusion of a sound knowledge of physiology, and the text of Dr. Pratt's little book is based, we think, on sound science. Whatever tends to diffuse a knowledge of health, to afford mental strength and comfort to thousands, and to prevent false notions of either health or disease, deserves to be widely known. And it is in this light that we cordially commend Dr. Pratt's little *brochure* to young men, and to all interested in the welfare of youth.

The Mother's Guide to the Management and Feeding of Infants. By John M. Keating, M.D. Rewritten and revised by Armand Temple, B.A., M.B. (Cantab.), M.R.C.P. (London: Henry Kimpton, 82, High Holborn.)

The judicious care of infancy naturally presents itself as the foundation of the health of each generation. This fact is tacitly recognised, but not always acted upon; for medical men well know that it is in the treatment of healthy "bairns," and in the physicking of the unhealthy ones, that popular medical superstition most strongly holds its own against the advance of science. Dr. Temple's volume is one of a class which the development of education is rapidly producing in our day. As public intelligence advances, the care of health must necessarily assume a high place in the concerns of educationists; and amongst the topics in which the women of our race will, it is to be hoped, receive a complete education in future, are the care and management of children in health and disease. We have never met with a more complete "manual for the mother," than this book. The following preliminary tables are of high interest, and serve as an example of the practical style in which this book is written:—

How to bring up Babies.—(1.) Keep them warm; let the clothing be warm, but not tight. Give them plenty of fresh air. Open the windows freely at least twice every day, and send the children out whenever the weather is fine. Wash the child all over with warm water and soap daily (if there be any skin eruption, tar soap should be used), wiping it thoroughly dry afterwards.

Nourishment: Under Seven Months.—(2.) The mother's milk is the most natural, and therefore the proper food for infants. Let her, therefore, suckle her child, if she have plenty of milk, and give it nothing else until it is seven months old. If the mother have only a little milk, let the child have it, and give it also cow's milk and water, as directed in (3). Begin to wean the baby when it is from seven to nine months old.

How to Bring up "by Hand."—(3.) If the child must be brought up by hand, it should be fed with warm milk and water out of a bottle. The infant should take at first equal parts of milk and water; but when it is a month old, two parts of milk should be mixed with one of water. Each bottleful should have a small lump of sugar put into it. When good cow's milk cannot be obtained, use the Swiss condensed milk. Begin with a small teaspoonful in half a feeding-bottleful of warm water for a meal; increase the quantity gradually; two teaspoonfuls for a meal is enough for a baby three months old. No sugar should be added. Give the baby no other kind of food whatever. Most of the deaths from hand-feeding are due to the practice of giving gruel, arrowroot, cornflour, and other unsuitable kinds of food, which contain no proper nourishment. While the baby is under a month old do not give it more than half a bottleful of milk-and-water for one meal. The bottle should draw easily. It should be rinsed out with warm water every time it is used. It is a good plan to have two bottles, using them alternately, so that the one not in use may be soaking in soda-water till required, when it is simply necessary to rinse it well with clean cold water. The tube and cork should be kept in clean cold water. If the bottle be not quite clean the milk will turn sour, and the child suffer in consequence.

Importance of Regular Feeding.—(4.) During the first six weeks the child should be put to the breast regularly every two hours during the day. After that age, about every three hours. During the night it does not require to be fed so often. It the child be brought up by hand, it should be fed regularly in the same way.

Food, when over Seven Months.—(5.) When it is seven months old, the child should have an occasional meal of Nestle's milk food, or its milk may be thickened alternately with arrowroot and Nelson's patent gelatine. When nine months old, it should have one or two meals a day of milk thickened with Robb's biscuit, Hard's farinaceous food, Liebig's malted food, or good well-baked bread. This should be given by a bottle, and be made thin enough to pass through a sieve or strainer. The child should still have, in addition, plenty of milk. When nine to twelve months old, the child should be completely weaned. At ten months, it should have a little broth or beef-tea every day. At a year and a half, it may take a little meat every day, cut up fine or pounded; but even then milk should constitute its chief food.

Improper Food.—(6.) Beer, wine, spirits, and all other stimulants; tea, cheese, pastry, and other food such as grown up people take, should never be given to young children. Sleeping-draughts, cordials, and other kinds of medicine, should never be administered without medical advice.

We have glanced carefully through the pages of this work; its instruction is eminently sound; and we have nothing for it but unqualified praise.

A BOOK OF HEALTHY HUMOUR.

Dr. Corpus's Class; A Series of Lectures on the Human Body from a Comical Point of View. (London: Wyman & Sons.) [Price, 1s.]

This should rank as one of the best, most innocent, and most genuine books of humour which has of late been published. It really sparkles with wit, and should, we imagine, become highly popular with all who are in the habit of giving recitations and readings. The droll gravity of the "lectures" is highly amusing; and there is also a considerable amount of serious information interspersed amongst the wit of the volume. Such an example as the following should recommend the book to those who desire the good medical effect of a hearty laugh:—"In entering the mouth, we first come to the lips. These are the parts of the feature that enter largely into the matter of expression, of which I have already spoken. In pretty girls they are generally compared to cherries or roses. In such subjects they are also very liable to become 'chapped.' The best treatment for this kind of affection is a preventive one—keep the 'chaps' from them. That is better than lip-salve. Besides cherries and roses, there is another plant with which the lips are intimately associated, and that is the mistletoe. What would life be without a kiss

now and then? Some young fellows would almost give one of their ears for it—that is, with the right person. They probably would not consent to the sacrifice for the sake of their grandmother."

Sanitary Appliances, Etc.

"Sanitas" Preparations.—We have received samples of these preparations, which are so well known as disinfectants, that any further recommendation of them seems quite superfluous. We have already commended "Sanitas" in its various forms in the articles on "Disinfectants," which have appeared in our "Family Circle" pages; and we have also found it necessary to make frequent mention of these valuable disinfectants in our replies to correspondents. We can only repeat here what we have already said of these preparations—namely, that for cleanliness, absence of disagreeable odour (no small boon in the matter of disinfection), effectiveness in destroying smells, infection and their causes, the "Sanitas" fluids are not to be surpassed. A tin of "Sanitas" powder should be kept in every closet, and the pans of all closets should always have a little of the powder sprinkled therein. This practice alone constitutes a medicated "trap" against disease-germs and sewage gas. The "Sanitas" fluid oil emulsions are adapted for use under all possible conditions requiring disinfection, and the handy "Vaporiser," which the Sanitas Company now sell, renders it possible to disinfect a room thoroughly at a small cost. By means of a spirit lamp the fluid is volatilised, and the air and furniture of a room become (as we have proved by experiment) thoroughly impregnated with the pleasant and highly-disinfective odour of the substance. The use of "Sanitas" has really reduced the science of disinfection to a matter of easy everyday practice.

Dr. Nichol's "Food of Health" Biscuits.—We have received a sample of these biscuits, which have been subjected to a careful examination. The result of this has been to show that these biscuits are highly nutritious, bone-forming, and eminently adapted for weakly persons and children, whilst they are equally well suited for adults. Their use tends to obviate digestive disorders, amongst which constipation may be ranked. These biscuits are to had at 23, Oxford-street, London, W. A handy "Penny Vegetarian Cookery Book" is also issued by the same firm.

Our Letter Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

Contributors are requested to send stamps for the return of the MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* Editor *and* Publishers *cannot hold themselves responsible for accidental loss.*

Correspondents are requested to write on one side of the paper only. The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

ELECTRICAL QUACKERY.

Dear Sir,—I have read with great pleasure your article on "Electrical Quackery"; and also the useful and clearly expressed papers by Mr. W. Lant Carpenter on "Electrical Appliances." It is not easy to estimate the amount of good they are likely to do in preventing people being imposed upon by the sellers of the (so-called) "magneto-electric" shams. Holding the post of Medical Electrician to a hospital, I often hear of these cases of imposition.

W. E. Steavenson, M.B. (Cantab), M.R.C.P.,
Casualty Physician and Medical Electrician to St. Bartholomew's Hospital.
Sept. 24, 1883.

RATIONAL DRESS.

Sir,—I observe you have been giving scope to the "Rational Dress" advocates of late; and to criticism of their methods of reform. If you do not deem the topic quite "threshed out," kindly allow me through your columns to ask Lady Harberton, Mrs. King, or any other "dress reformer," to point out to me wherein the "elegance" of their reform is to be found. We have all heard of the Venus de Milo and her Florentine neighbour as the models of the female form. But will any one tell me where a dress reformer is to be seen, the lines of whose body as clothed in the garments of wisdom, approaches to anything like the elegant shape of the human frame? "Dress-reformers" make much of the natural form of the body; and rightly so. But I have never yet seen a "dress reformed" lady who did not look somewhat dowdyish. I pray my fair friends to excuse the plain-speaking of a male creature. I have seen the "reformers" clad in "breeks," sack-like jackets, free flowing robes, *et hoc genus omne*, but never yet have I seen a dress-reformed lady exhibit a tithe of the elegance which a well-made, ordinary "close-fitting" (but *not* constricting) costume gives to the figure. There may be some dress reformers yet to come who will show us the graceful outlines of the form we all admire, as fashion shows those outlines to-day. But I haven't seen them yet. If they exist, then, for the sake of "rational dress," health, and æsthetics, I say, in the language of the poet, "trot them out."—I am, yours, &c., Willing to be Converted.

HEALTH IN THE HOME.

Sir,—Allow me a small space in one of the columns of your most valuable journal to say a little on the most important subject, Health—the chief object of good health being the wholesome and well arranged sanitary condition of dwelling-houses. There are, however, a variety of systems patented and brought before the public by numerous tradesmen and others, some builders, decorators, plumbers, merchants, &c., but I may say the simplest arrangement is the most effectual.

The following, if properly applied, may be considered a good system:—Cut off the communication of the house drain with the sewer by inserting a trap having a water seal at the nearest point to sewer. Over this trap build an inspection chamber (of glazed bricks) of suitable size for a man to get to the trap and inspect, or clean it out if necessary, and covered with an air-tight cover. Into this chamber pass an air inlet fitted with a non-return valve, or an open pipe above the roof.

The sketch, Fig. 1 shows a Buchan, No. 2, disconnecting drain-trap. A shows the fall of sewage into the trap, thus making it self-cleansing; B, course of sewage, C, the fresh-air passing through the drain. D, an access opening for the sewer side of the trap, also, if considered necessary, to ventilate the sewer. (No. 1

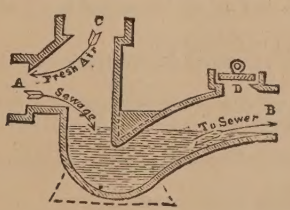

Fig. 1.

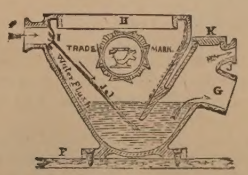

Fig. 3.

Fig. 2.

trap is made without this opening.) The pipes from the trap being of suitable size they should be well laid, the joints being made with good Portland Cement by an experienced man, care being taken that no surplus cement remains in the interior to cause a stoppage.

Should there be any junctions or bends required, these should be channel pipes, and an inspection chamber built over, covered with an air-tight cover giving a good access for passing a rod through the drain in case of stoppage.

The soil-pipe may lead into the drain with a bend junction Y, or otherwise as most suitable.

The soil-pipe should be carried up above the ridge of the roof, and a ventilator fixed thereon.

Fig. 2 shows a No. 1 Buchan's induced current fixed ventilator, for soil-pipe.

Rain-water and wastes should discharge over gulleys, which would disconnect them from the drain, and catch any sediment of sand, &c.

Fig. 3 shows a sketch of a "Carmichael" closet, which is a cheap and effectual and complete wash-down arrangement, there being always sufficient water in the trap to shut off the soil-pipe. F is the service-pipe, the water passing through the jet I, and completely washing out at G; K is an access opening for cleansing, if necessary; K represents a flushing-rim round the interior of the pan.

With this arrangement complete, the sewer being trapped off outside the house, fresh air continually passing through the inspection chamber and up the ventilator, it must be clear that no smells could well reach the inhabitants.—I am, yours truly,

WILLIAM HUGHES.

7, Everleigh-street, Tollington-park, N., London.

QUERIES AND ANSWERS.

[Correspondents will please note that Queries addressed on Post-cards are consigned to our waste-paper basket. If information is worth having, it is at least worth a letter.]

GENERAL.

ALASKA.—See article on "Sea-sickness" in a recent number of HEALTH.

ENTOR.—Possibly not; because the conditions were not complied with.

CANTOR.—Edinburgh or London.

J. BINGLEY.—Try the effect of a letter to the firm.

WALLS.—No quack can sue for professional services. He can be indicted, if good evidence be forthcoming, for practising medicine without a qualification to do so.

S. S.—The work you name was reviewed in HEALTH, No. 20, page 318. Its title is "Kallos," and it is published by Simpkin & Co.

SANITARY.

SYLVIA—There is no doubt that the system named is a good one. We know it well.

A. J. BLAKE.—Try the effect of Sanitas oil.

B. KIMPTON.—No question of ventilation involved; only one of disinfection.

A. KITCHING.—Write for a syllabus to the Secretary, Science and Art Department, South Kensington, London. If not informed, write us again.

R. A. C.—The air we regard as bracing, and the situation of the houses good.

MEDICAL.

G. T.—1. Clothe warmly, and, if necessary, fortify your system against attack by tonics. If weak in chest, take cod-liver oil. A series of hot salt baths would also do good. 2. Yes: the ear-trouble may be cured. Consult an ear-surgeon. You probably have a perforation of the "drum," and there is always risk of cold and inflammation till you get the drum healed.

E. SMITH.—Yours is a by no means uncommon case of dyspepsia. You must have more out-door exercise, and give up the late supper. See to the condition of stomach and bowels. More fresh air and a cold sponge-bath will do you good.

MONGOOSE.—See our "Notes by the Way," No. 25 HEALTH, for remarks on snake-bite. The poison of different snakes seems to act in different ways. There is no remedy beyond excising the bite, preventing the spread of the poison through the circulation, and giving plenty of stimulants. There is no one antidote which can affect the poison when once introduced, but experiments are proceeding now in the entire subject.

ANTI-QUACK.—No need to be alarmed; what you mention is a perfectly normal occurrence in healthy life. See that he sleeps on a hard mattress, and avoid fluids late at night. Yes, we should think Dr. Pratt's "Sermon to Young Men," (Baillière, Tindall, & Cox, London) should be read; but be careful not to fancy (or to instil the belief) that any disease is present.

VICTOR.—See advice to "Anti-Quack," above; take a tea-spoonful of Fellows' "Syrup of the Hypophosphites" thrice daily before meals in a wineglassful of water; try cold sponging; and see what is said above about there being no disease present.

A. H. W.—Try a vegetable dietary, and "Friederichshall" mineral water. The latter we deem a perfect cure and preventive when taken each morning (or oftener) for a time.

M. WILSON.—No; the pad has no advantage that we can see over a flannel protector. Glad our advice has been effective.

SMOKER.—We do not approve of cigarettes smoked as you use them. The Strawfena Cigarettes of Messrs. Robinson & Barnsdale, of Nottingham, are the best. We have seen results such as you name from cigarette-smoking, though we do not think the paper has much to do with them. We should advise you to give them up for a time.

EXPERIENCE.—See advice to "Victor," above.

ONE ALMOST IN DESPAIR.—Try the effect of a saturated solution of boracic acid used freely to the parts. This will counteract the offensive perspiration; but you are evidently in a low state of health, and we should advise you to have a good medical opinion on your general condition.

CLEPINGTON.—Yours is a case for strict attention to the general health. Let your food be of the simplest kind; give up tea and coffee (likewise all medicines); take a little mineral water in the mornings for the stomach troubles; and if indigestion is present a little Morson's "Pepsine," as directed on the bottle. You must try cold sponging in the morning, and have a little open-air exercise. You will grow well by common care, not through tampering with all kinds of drugs.

VOX HUMANI.—Seeing that the voice depends upon the shape and size of the larynx, the nature of the vocal chords, &c., we can only say that any one's voice may be "improved" within certain possible limits. The gentleman you name has a voice of full compass, improved and strengthened by much hard training. It is impossible to say how far your voice can be "trained." See Gordon Holmes on "Voice and Voice Production" (Chatto & Windus)—a work we reviewed some time ago in HEALTH. Modes of treating the voice will be found described therein.

CANTON.—Thank you for your cheery letter. We are glad to hear our advice has put your troubles in a new light. The powder you enclose of "quack" production is probably sulphate of zinc. It is regretable to hear of a chemist in league with a quack.

H. KING.—Thanks for your kind letter. The safest advice is that which teaches you to work cheerfully and hopefully always.

MON FRÈRE.—We should advise you to make a change as complete as possible in your dietry. Try a vegetable diet for a time. See to the ventilation of your bedroom. The first drug you name may cause headache. You do not say why you take it. The tonic recommended to "Victor" in present number will do you good.

A LOVER OF HEALTH.—The prescription may safely be tried. If not successful, we shall be glad to advise further.

ESCA.—There is no special book for your case, but Dr. Chambers' book on "Diet in Health and Disease" should suit you admirably. The book costs 10s. 6d., and is published by Smith, Elder, & Co.

A. H. SEXTON.—See reply to "Victor" in present number.

Y. K.—You are generally "out of sorts." We should firstly recommend you to try a little Friederichshall Water each morning, and to leave off all stimulants. With food (avoiding tea and coffee) take a little Morson's "Pepsine" as directed. Never mind the phrenology, and don't worry over any "causes" of disease you fancy you know of. Such fears are groundless. In your case cold sponging will do good; and, of course, your mental condition requires looking to. In the other matter, we cannot presume to advise you. Hereditary disease is always terrible.

IMPLEMENT WORKS.—No; the fluid is not what you suppose it to be. Try cold sponging every morning, and follow the advice given to "Victor" above. The medical man you name is a "qualified quack"—you can perhaps appreciate the appellation. No member of an honourable profession would advertise as he does; and his claims for mention as a successful doctor are, we think, of the most meagre description. Have nothing to do with him. Be cheerful, and rest assured you are perfectly healthy—only a little nervous about yourself.

DEREHAM.—See advice to "Victor" in present number of HEALTH.

QUICKLIME.—The ear trouble corresponds to that advised for in the case of "G. T." above. See an aural surgeon. We think in your case the following will do much good:—Syrup of iodide of iron, three drachms; mucilage acaciæ, one ounce; cod-liver oil to

make up six ounces. A tablespoonful thrice daily. The use of this will likely benefit your ear and other affections.

Southampton.—What you mention is quite common in health. See advice to "Victor" above.

A Constant Reader (please use a more distinctive name) may be recommended to purchase Mr. Banting's pamphlet on "Corpulence" from Harrison, Pall-mall, London, and study what is therein said about the rational way of decreasing stoutness. We shall shortly publish papers on "How to get Thin or Fat."

Atra Cura.—Why not give a good tonic a fair trial? Try Fellows' "Hypophosphites," which we have seen do much good in cases such as yours. Try this, and in event of any laxative being required, take "Æsculap" water in the morning. Yours is a case for tonics, fresh air, and generous diet—not for aperients. Write again if not improved.

Dim Sight.—Probably an affection which judicious advice regarding the wear of glasses will remove. Write to Mr. Browning, 63, Strand, W.C., for his method of suiting the sight with glasses. Such a method applied now may save your vision from ultimate weakness. The cause you mention had nothing to do with your ailment, in our opinion.

Chelsea.—Try the cod-liver oil and iron, as recommended to "Quicklime" in present number of Health. If that does not suffice, write again. The medicine is a fat-producer and tonic as well. Don't overdo your exercise.

J. M. Calton.—Try the effect of a lotion of three drachms of sulphur, four drachms of glycerine, and four ounces of rectified spirit—this to be applied at night to the eruption.

Trike.—Local irritation. Look well to your garments, and see there is no injurious dye about any of them. There is possibly too great friction. No treatment required beyond a little Vaseline applied locally, a slight aperient, and rest.

R. Whyte.—No; no injurious effect whatever. You are in very good hands, and cannot do better than obey all directions.

Toujours Loyale.—Where have you ever heard of an authenticated case of poisoning by absorption of carbolic acid from dressings? Don't you know that a whole system of surgery (antiseptic) is daily practised with this treatment? Send us any details; but we must say, we think you labour under some misapprehension.

Ora Pro Nobis.—Try change of dietary, and avoid vegetables for a time. Give up tea and coffee, and try cocoa instead. Rest after meals, and take moderate open-air exercise. Write again if not improved. A little Pepsine with your food may also assist you; or the following:—Carbonate of ammonia, one drachm; bicarbonate of potass, a drachm and a-half; infusion of chiretta, six ounces. A tablespoonful thrice daily before food.

W. M. M.—We think that under the whole circumstances of your case you should see a good physician. Send us your name and address. The person who advertises we know nothing of. We should not advise you to consult any one who advertises.

Mars.—We think you possess a special idiosyncrasy or tendency to cold—a not uncommon feature, and one which may or may not depend on a low state of the system. What we should recommend would be to try the effect of cold sponging each morning and the tonic recommended to "Victor" in present number. Write again if unimproved. Be cheerful—another piece of advice worth attending to.

E. Lowe.—We should always be glad to advise you in all ways, to the best of our ability. The case you mention is one of over-anxiety and over-education. What we would recommend is, firstly, a *prolonged rest* of months. This may seem hard, but it is necessary. The patient should simply rest; and if you can afford a visit to Southport or Blackpool (still resting) it would do much good. Let the patient also take a teaspoonful of Fellow's "Syrup of the Hypophosphites" thrice daily before meals in a wineglassful of water. We should like to hear full particulars about patient's personal health in all ways, and the nature of the strain, and how it affected any natural functions. Glad to advise further, if necessary.

Wildfire.—Smear the hands with pure Vaseline every night. Write if not successful in curing.

Fred. W. C.—The effect of our former recommendation, from your account was, we think, to bring out your trouble to the surface. Try now the tonic recommended to "E. Lowe," above; and let us hear how you are after a trial thereof.

J. Fletcher.—Yes; Koumiss is well known, also Mullein. We approve highly of the Maltine Company's preparations, in which malt is added to sundry "foods." Try the maltine and cod oil, and see what effect ensues. Our papers on "How to get Thin or Stout," will shortly appear. A visit to the seaside, by increasing the appetite, may also do much good. "Cod-oil Emulsion" alone should also suit your case; with plenty of fatty articles, mutton chops, cream, butter, eels, &c. Glad to hear from you again. See to the patient's general health.

D. Maclean.—Try first the effect of the cod oil prescription ordered to "Quicklime," in present number, and write again after a trial of the medicine. Clothe warmly and avoid chills.

W. H. Harvey.—Both of your queries may be answered by referring you to the reply to "W. Scott," in Health, No. 24.

X. Y. Z.—Try the following:—Carbonate of ammonia, one drachm; tincture of squills, three drachms; compound tincture of camphor, half-an-ounce; infusion of senega to make up six ounces. A tablespoonful every four hours. After one trial of this let us hear from you again.

A. W. G.—1. We believe the "food" you name to be thoroughly good. 2. Thanks for suggestion, but at present it is impracticable in journalism.

W. Sutton.—Certainly; try Morson's "Pepsine" by all means, as directed on the bottle. Glad to hear you are improved. As the vegetable dietary does not agree with you, try the effect of milk, light puddings, &c., for a time. For the back ailment try cold sponging each morning, and brisk friction with a flesh-brush.

Squip.—Our advice to you is to see a good surgeon (avoid quacks). Take the following:—Iodide of potass, two drachms; infusion of calumba, six ounces. A dessertspoonful thrice daily. Dress the sore surface with glycerine of borax.

F. G. S.—We do not recommend the medicine you name. Read Banting "On Corpulence" (published by Harrison, Pall-mall, London). The only rational way of reducing size is to modify diet. The circular you mention shows once again the "old stage-trick" of the quack.

Eyesight.—Our previous opinion is confirmed by your letter. See to getting a good pair of spectacles adjusted to your sight by the method of Mr. Browning, 63, Strand, London, to whom write for particulars.

Estomago.—Try the following prescription, which will ease and cure the symptoms:—Carbonate of ammonia, one drachm; bicarbonate of potass, a drachm and a half; infusion of chiretta, six ounces. A tablespoonful thrice daily before food. Write again if unrelieved.

Jane Moody.—1. By no means use any lotion for the head containing (as your lotion does) lead. See our papers on the "Hair" in Parts I., II., and III. Health. 2. See advice to "Fylde" in No. 24 Health.

Sedaem.—The quantity of ozone varies greatly in different places. There is no rule for its distribution, but it exists in greatest quantities by the sea and in mountain air.

Juvenis.—We do not recommend you to tamper with the mixture you name. See a good dentist, who will destroy the nerve for you.

Inceptor.—Caviare is the preserved roe or eggs of the sturgeon—a great delicacy.

Hope.—No connection between the red nose and the symptom you name. For the former, try a vegetable dietary, and avoid stimulants. Attend carefully to general health.

Athos.—Never heard of the preparation. It might, however, be tried. We do not know where it can be procured. There are one or two vegetable lotions we have seen tried with good effect. We believe in iron given internally, with careful attention to the health generally. Some cases resist all remedies, if the health is low.

C. C. Wilson.—Try nearer the North—Highgate and Hampstead.

H. W. B.—Your symptoms are those of slight weakness, for which the best remedy would be a thorough change for a week or two. Drink freely of potash water for the symptoms you name. There is no need to be alarmed. Possibly you are closely confined; if so, try open-air exercise.

Sufferer.—We have found cold sponging in the mornings, with brisk friction by means of a hard towel thereafter, a capital preventive of cold and of liability to chill. Try this, and clothe warmly.

A. Grey.—As all letters are destroyed, and as we cannot be expected to keep your particular case in mind, kindly re-state your wishes. So far as we can discover from your letter, the preparation should be fluid, not thick like a pomade.

Mrs. Wood.—We had never heard of the dentist or the method you name. We can form no opinion regarding the apparatus from the meagre details sent. If a sample of the apparatus is sent to us, we shall be glad to submit it to Mr. Carpenter for his opinion.

Fides.—The "tonic" may be known abroad. It is not known here. The public should be highly suspicious of all such preparations. These "Phosphorus" tonics are often so only in name. Our future programme includes such papers as those you name.

F. S. C.—No medicine can accomplish what you wish. Your only hope is careful treatment to remove any abnormal condition, and, above all, sound general health, in the absence of which your hopes cannot be realised. There should, from your present account, be no difficulty in attaining the desired end. Let the "opposite side" be careful and moderate in all things. Take plenty of rest. Glad to advise further if necessary.

H. G. S.—See advice to "Victor" in present number. Be cheer-

ful, and know that you suffer from no actual disease—only a slight weakness, which time and care will improve.

Thomas.—You would see the quacks you name were publicly noticed in the Dublin Police Court.

A. N.—1. No; the two preparations are widely different, and each must be judged on its own merits, and for each special case. 2. Oiled silk is preferable. The object is simply to prevent evaporation.

J. B. W.—Yes; to read during meals is commonly reckoned as physiologically erroneous—we won't say as absolutely injurious. The theory is, that as the stomach and other organs require (and exert) nervous power during digestion, it is better to allow nothing to interfere with their work. We do not say that this can be borne out; but the feeling of satisfaction which follows a meal, and which is often accompanied in good health by drowsiness, probably indicates that a certain amount of nervous exhaustion occurs during digestion. The pleasant chat of a dinner-party is probably of value physiologically as supplying a slight mental stimulus, without making too severe demands on brain and nerves. If any evidence exists at all on the subject, we think it tends to discourage reading at meals.

J. Lucas.—Thanks, many, for your kindly words. We shall always endeavour to aid the causes you name. 1. No positive cure for corns save extraction. Touching with caustic repeatedly may cause the corn to degenerate. 2. Good glasses, tested accurately, as by Mr. Browning, 63, Strand. Spectacles properly fitted do wonders. Guard your eyes at night with a shade. 3. The ear-noises are a symptom of slight head-overwork, we should fancy—if not caused by wax. Try rest, cold to the head, and the tonic recommended to "Victor" above. 4. Salt assists digestion, for the reason that certain compounds of the gastric juices are elaborated therefrom.

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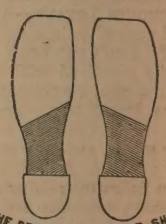

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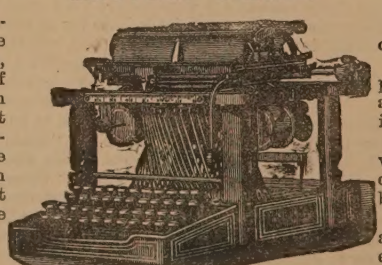

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